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EXAMINER	
SITTON, JEHANNE SOUAYA	
ART UNIT	**PAPER NUMBER**
1634	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	12/27/2006	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/608,296	ADAM ET AL.	
	Examiner	Art Unit	
	Jehanne S. Sitton	1634	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10/6/2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *31-40* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *31-40* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *12/2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Currently, claims 31-40 are pending and under examination in the instant application. All the amendments and arguments have been thoroughly reviewed but are deemed insufficient to place this application in condition for allowance. The following rejections are either newly applied, as necessitated by amendment, or are reiterated. They constitute the complete set being presently applied to the instant Application. Response to Applicant's arguments follow. This action is FINAL.

2. The objection to the specification is withdrawn.

Claim Rejections - 35 USC § 112

3. Claims 31-40 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a method of diagnosing leanness in an a human subject comprising detecting the presence of an A at position of 7328 of SEQ ID NO: 1 or a G at position 9182 of SEQ ID NO: 1, wherein the presence of an A at position 7328 or a G at position 9182 of SEQ ID NO: 1 is indicative of a predisposition to leanness, does not reasonably provide enablement for a method of diagnosing predisposition to obesity or central obesity in a human subject by detecting any polymorphic variation associated with obesity at position 7328 or 9182, or a G at position 7328, or a T at position 9182, in a nucleotide sequence identical to SEQ ID NO: 1, or a nucleotide which is 99% identical to SEQ ID NO: 1, or in the corresponding position in the complementary sequence thereof, in a nucleic acid sample from a subject. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make or use the invention commensurate in scope with these claims. There are

many factors to be considered when determining whether there is sufficient evidence to support determination that a disclosure does not satisfy the enablement requirements and whether any necessary experimentation is undue. These factors have been described by the court in *In re Wands*, 8 USPQ2d 1400 (CA FC 1988). *Wands* states at page 1404,

> "Factors to be considered in determining whether a disclosure would require undue experimentation have been summarized by the board in Ex parte Forman. They include (1) the quantity of experimentation necessary, (2) the amount of direction or guidance presented, (3) the presence or absence of working examples, (4) the nature of the invention, (5) the state of the prior art, (6) the relative skill of those in the art, (7) the predictability or unpredictability of the art, and (8) the breadth of the claims."

The nature of the invention and the breadth of the claims:

The claims encompass detecting any obesity or central obesity in a human subject by detecting the presence or absence of any polymorphic variation associated with obesity at position 7328 or 9182, or a G at position 7328, or a T at position 9182, in a nucleotide sequence identical to SEQ ID NO: 1, or a nucleotide which is 99% identical to SEQ ID NO: 1, or in the corresponding position in the complementary sequence thereof, in a nucleic acid sample from a subject. The nature of the claimed invention, therefore, requires the knowledge of predictive associations between any polymorphism in any of the recited nucleic acids and positions in a human subject and a predisposition to obesity or central obesity.

The amount of direction or guidance and presence/absence of working examples:

The specification teaches that SEQ ID NO: 1 is the PLA2G1B nucleotide sequence. The specification teaches comparison of sequences from human PLA2G1B (SEQ ID NO: 1) and the PLA2G1B sequence from rat, mouse, and sand rat (figure 5A). The specification teaches that

individuals were tested for central fat measurement and triglyceride measurements (page 41). The specification teaches that individuals in the top and lower 10^{th} percentile were chosen as subjects and that a subset of individuals falling in the middle range were chosen as a control group. The specification teaches that potential polymorphisms in the PLA2G1B polynucleotide were identified in a publicly available SNP database and verified in a group other than the study group (page 44). The specification teaches 10 SNPs (page 44, table 1, page 49) were found to be statistically significant polymorphisms. However, the specification teaches that only two of these SNPs, A at position 7328 and G at position 9182 of SEQ ID NO: 1 were found to have a statistically significant association with reduced fat deposition (leanness) (A: p=0.00669; G: p=0.00688, respectively). Although at page 53, the specification asserts that the alternate alleles (G at position 7328 and T at 9182) were found be associated with central obesity, this statement is unclear as Example 2 of the instant specification does not actually provide any evidence that this is the case. The specification only teaches that individuals in the study in the top and lower 10^{th} percentile were chosen as subjects and that a subset of individuals falling in the middle range were chosen as a control group. The specification does not teach if the alternate allele was found to be more prevalent in obese subjects as compared to controls. This is an important distinction as the specification teaches at page 9, that the allele frequencies for positión 7328 is 84% G and 16% A (lean associated allele), and for position 9128 is 85% T and 15% G. Accordingly, it is clear that the alternate allele (G at position 7238 and T at position 9182 (claims 34-37) is found in at least 84% of the population, however the specification is completely silent as to whether these alleles are statistically associated with obese subjects as compared to controls. At page 50, table 7, it is clear that the allele frequency of haplotypes which possess a

G at position 7328 and a T at position 9182 is greater than haplotypes which contained the leanness associated alleles. However, the specification is silent as to whether these haploytpes are associated with obese subjects vs normal controls. Accordingly, given the limited guidance in the specification, the skilled artisan would be unable to determine if the alternative allele was predictably associated with predisposition to obesity as the alleles occur in 84% of the population.

The specification provides no guidance as to how the SNPs at position 7328 (A) and 9182 (G) function to provide a phenotype of reduced fat deposition (leanness). Additionally, the specification fails to provide a universal correlation that any allele at the clamed positions is associated with a predisposition to obesity. Claim 31 encompasses the detection of any allele at position 7328 or 9182, however it is clear from the teachings in the specification that particular alleles (A at position 7328 and G at position 9182) at these positions are in fact not associated with a predisposition to obesity, but rather with leanness. The claims not only encompass additions, deletions and transversions at the recited position, but also encompass the presence of a T or a C at position 7328 of SEQ ID NO: 1, as well as an A or a C at position 9128 of SEQ ID NO:1, however the specification does not teach if any of these mutations or alleles even exist in humans.

The claims encompass not only detection of any polymorphism at position 7328 or 9182 in SEQ ID NO: 1, but in sequences which are 99% identical to SEQ ID NO: 1. The claims therefore encompass detection of polymorphisms in a large number of variants of SEQ ID NO: 1. However, the specification does not teach degenerate variants of SEQ ID NO:1. SEQ ID NO: 1 is 12,174 nucleotides long. Accordingly, a sequence which is only 99% identical to it could

potentially have 121 nucleotide differences, which could substantially alter the sequence of the encoded amino acid. Although the specification teaches that 10 SNPs were found in SEQ ID NO:1, the genus of sequences encompassed by the broad claim recitation is not commensurate in scope with the teachings of the specification.

The specification provides no structure/function correlation between the disclosed SNPs and reduced fat deposition for the ordinary artisan to be able to predict which alleles within the claimed positions might be predictably associated with the claimed phenotypes. The two alleles: an A at position 7328 and a G at position 9128, could be part of a reduced fat deposition-associated haplotype, however the causative mutation is not necessarily one of the SNPs taught in the specification. The causative mutation could be in a gene thousands of nucleotides away, however the specification provides no indication of what this allele might by.

The specification provides no predictable association that any alteration at the claimed positions is associated with predisposition to obesity in humans. No common element or attributes of the sequences are disclosed which would permit selection of sequences as phenotypically associated polymorphisms. No structural limitations or requirements which provide guidance on the identification of sequences which meet these functional limitations of associating a polymorphism with fat deposition is provided. It is not clear whether the polymorphisms shown are causative for the detected phenotype or whether they may simply represent markers for another gene that is in linkage disequilibrium with the specific alleles at issue, and the actual gene which is involved in the detected reduced fat deposition may be tens of thousands of nucleotides distant from the polymorphisms described in the specification. The

specification does not teach the function of polymorphisms of PLA2G1B nor how their function, or lack of function, or altered function are predictably associated with fat deposition.

The state of the prior art and the predictability or unpredictability of the art:

The art does not teach the function of polymorphisms of PLA2G1B or how they are involved in fat deposition, either in humans or in non human species.

The level of skill in the art:

The level of skill in the art is deemed to be high.

The quantity of experimentation necessary:

As neither the art nor the specification provide guidance as to which alterations at positions throughout PLA2G1B are predictably associated with fat deposition, the analysis required to determine with the scope of the claimed alterations is associated with a predisposition to obesity or central obesity in human is replete with trial and error experimentation, with the outcome of each analysis being unpredictable. Screening each possible alteration represents an inventive and unpredictable undertaking in itself, with each of the many intervening steps, not providing any guarantee of success.

In order to practice the invention as claimed, one would first have to establish that a predictive relationship exists between the disclosed polymorphisms and obesity or central obesity in humans, as well as determining that such relationships was consistent throughout a broad scope of possible genetic backgrounds (99% identity). Due to the scope of the claims, one

of skill in the art would be required to further undertake extensive trial and error experimentation with a large number of patients with different degrees of fat deposition, and controls, to determine mutations that share a predictive predisposition to obesity or central obesity.

Thus, given the broad claims in an art whose nature is identified as unpredictable, the state of the prior art, the lack of guidance in the specification, the breadth of the claims and the quantity of experimentation necessary to practice the claimed invention, it would require undue experimentation to practice the invention commensurate in scope with the claims.

Response to Arguments

4. The response traverses the rejection and points to paragraphs 00173, 00164, and 00165 as support for association of the recited positions with obesity. These issues are discussed in the rejection above, however it should be noted particularly that neither paragraphs 00164 nor 00165 teach that the particular positions are associated with obesity. The response asserts that the specification provides clear guidance as to the person of ordinary skill in the art for the scope of the claimed subject matter and cites paragraphs 0079, 0093, 00101, 00151 and 00161 of the specification. This argument has been thoroughly reviewed but was not found persuasive. The paragraphs set forth in the response only provide general guidance regarding the % identity of possible sequences contemplated by the specification; methods of performing nucleic acid based detection techniques, such as PCR; discussion of position 7256 of SEQ ID NO: 1, which is not claimed; and how to detect polymorphic variations. These sections do not provide the skilled artisan with any indication as to whether the presence or absence of alleles at positions in claim 1, or the particular alleles in claims 34-37, which are present in at least 84% of the population, are associated with a predisposition to obesity as compared to normal controls. Particularly

relevant is the haplotype analysis at page 50 of the specification. Although a C (haplotype 4) at position 7256 was found to be associated with NIDDM in males (page 53), the presence of a G at position 7328 and a T at position 9182 is not limited to this haplotype but is also found in other haploytpes whose allele frequencies are much larger. The specification, however, is silent with respect to whether the claimed alleles are associated with obesity as compared to normal controls. Accordingly, the arguments made that the experimentation required to practice the claimed methods is routine is not found persuasive as the specification provides no teaching or guidance that the alleles which normally appear to be found in a large majority of the population are associated with obesity or central obesity.

5. Claims 31-40 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The claims encompass detecting any obesity or central obesity in a human subject by detecting the presence or absence of any polymorphic variation associated with obesity at position 7328 or 9182, or a G at position 7328, or a T at position 9182, in a nucleotide sequence identical to SEQ ID NO: 1, or a nucleotide which is 99% identical to SEQ ID NO: 1, or in the corresponding position in the complementary sequence thereof, in a nucleic acid sample from a subject. The genus of nucleic acids encompass is a large variable genus which includes variants

with any allele at position 7328 or 9182 of SEQ ID NO: 1 or any nucleotide sequence which is 99% identical to SEQ ID NO: 1, which are associated with a predisposition to obesity.

The specification teaches that SEQ ID NO: 1 is the PLA2G1B nucleotide sequence. The specification teaches that individuals were tested for central fat measurement and triglyceride measurements (page 41). The specification teaches that individuals in the top and lower 10^{th} percentile were chosen as subjects and that a subset of individuals falling in the middle range were chosen as a control group. The specification teaches that potential polymorphisms in the PLA2G1B polynucleotide were identified in a publicly available SNP database and verified in a group other than the study group (page 44). The specification teaches 10 SNPs (page 44, table 1, page 49) were found to be statistically significant polymorphisms. However, the specification teaches that only two of these SNPs, A at position 7328 and G at position 9182 of SEQ ID NO: 1 were found to have a statistically significant association with reduced fat deposition (leanness) (A: p=0.00669; G: p=0.00688, respectively), not obesity. Although at page 53, the specification asserts that the alternate alleles (G at position 7328 and T at 9182) were found be associated with central obesity, this statement is unclear as Example 2 of the instant specification does not actually provide any evidence that this is the case. The specification only teaches that individuals in the study in the top and lower 10^{th} percentile were chosen as subjects and that a subset of individuals falling in the middle range were chosen as a control group. The specification does not teach if the alternate allele was found to be more prevalent in obese subjects as compared to controls. This is an important distinction as the specification teaches at page 9, that the allele frequencies for position 7328 is 84% G and 16% A (lean associated allele), and for position 9128 is 85% T and 15% G. Accordingly, it is clear that the alternate allele (G at position 7238 and T

at position 9182 (claims 34-37) is found in at least 84% of the population, however the specification is completely silent as to whether these alleles are statistically associated with obese subjects as compared to controls.

The specification provides no guidance as to how the SNPs at position 7328 (A) and 9182 (G) function to provide a phenotype of reduced fat deposition (leanness) or obesity. Additionally, the specification fails to provide a universal correlation that any allele at the clamed positions is associated with a predisposition to obesity. Claim 31 encompasses the detection of any allele at position 7328 or 9182, however it is clear from the teachings in the specification that particular alleles (A at position 7328 and G at position 9182) at these positions are in fact not associated with a predisposition to obesity, but rather with leanness. The claims not only encompass additions, deletions and transversions at the recited position, but also encompass the presence of a T or a C at position 7328 of SEQ ID NO: 1, as well as an A or a C at position 9128 of SEQ ID NO:1, however the specification does not teach if any of these mutations or alleles even exist in humans. Additionally, the claims encompass not only detection of any polymorphism at position 7328 or 9182 in SEQ ID NO: 1, but in sequences which are 99% identical to SEQ ID NO: 1. The claims therefore encompass detection of polymorphisms in a large number of variants of SEQ ID NO: 1. However, the specification does not teach degenerate variants of SEQ ID NO:1. SEQ ID NO: 1 is 12,174 nucleotides long. Accordingly, a sequence which is 99% identical to it could potentially have 121 nucleotide differences, which could substantially alter the sequence of the encoded amino acid. Although the specification teaches that 10 SNPs were found in SEQ ID NO:1, the genus of sequences encompassed by the claims is much larger. The two species particular species taught in the specification is not

representative of this large genus as it not clear that this broad genus of additional alleles, ie sequences which are specifically 99% identical to SEQ IDNO: 1, even exist in humans.

The specification provides no structure/function correlation between the disclosed SNPs and reduced fat deposition for the ordinary artisan to be able to predict which alleles within the claimed positions might be predictably associated with the claimed phenotypes. The two alleles: an A at position 7328 and a G at position 9128, could be part of a reduced fat deposition-associated haplotype, however the causative mutation is not necessarily one of the SNPs taught in the specification. The causative mutation could be in a gene thousands of nucleotides away, however the specification provides no indication of what this allele might by.

The specification provides no predictable association that any alteration at the claimed positions is associated with predisposition to obesity in humans. No common element or attributes of the sequences are disclosed which would permit selection of sequences as phenotypically associated polymorphisms. No structural limitations or requirements which provide guidance on the identification of sequences which meet these functional limitations of associating a polymorphism with fat deposition is provided. It is not clear whether the polymorphisms shown are causative for the detected phenotype or whether they may simply represent markers for another gene that is in linkage disequilibrium with the specific alleles at issue, and the actual gene which is involved in the detected reduced fat deposition may be tens of thousands of nucleotides distant from the polymorphisms described in the specification. The specification does not teach the function of polymorphisms of PLA2G1B nor how their function, or lack of function, or altered function are predictably associated with fat deposition.

In analysis of the claims for compliance with the written description requirement of 35 U.S.C. 112, first paragraph, the written description guidelines note regarding genus/species situations that "Satisfactory disclosure of a ``representative number'' depends on whether one of skill in the art would recognize that the applicant was in possession of the necessary common attributes or features of the elements possessed by the members of the genus in view of the species disclosed." (See: Federal Register: December 21, 1999 (Volume 64, Number 244), revised guidelines for written description.) In the instant case, the specification fails to teach the necessary common attributes or features of the genus of encompassed nucleic acids and polymorphisms in view of the species disclosed. As such, one of skill in the art would not recognize that applicant was in possession of the genus of nucleic acids and polymorphisms encompassed by the broadly claimed invention.

Vas-Cath Inc. v. Mahurkar, 19 USPQ2d 1111, makes clear that "applicant must convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession of the invention. The invention is, for purposes of the 'written description' inquiry, whatever is now claimed." (See page 1117.) The specification does not "clearly allow persons of ordinary skill in the art to recognize that [he or she] invented what is claimed." (See Vas-Cath at page 1116.)

The skilled artisan cannot envision the detailed chemical structure of the encompassed nucleic acids and polymorphisms, regardless of the complexity or simplicity of the method of isolation. Adequate written description requires more than a mere statement that it is part of the invention and reference to a potential method for isolating it. The nucleic acid itself is required. See Fiers v. Revel, 25 USPQ2d 1601, 1606 (CAFC 1993), and Amgen Inc. V. Chugai

Pharmaceutical Co. Ltd., 18 USPQ2d 1016. The current situation is a definition of the compound solely based on its functional utility, as a polymorphism, without any definition of the particular polymorphisms claimed.

Finally, University of California v. Eli Lilly and Co., 43 USPQ2d 1398, 1404, 1405 held that:

> To fulfill the written description requirement, a patent specification must describe an invention and do so in sufficient detail that one skilled in the art can clearly conclude that "the inventor invented the claimed invention." Lockwood v. American Airlines, Inc., 107 F.3d 1565, 1572, 41 USPQ2d 1961, 1966 (1997); In re Gosteli, 872 F.2d 1008, 1012, 10 USPQ2d 1614, 1618 (Fed. Cir. 1989) (" [T]he description must clearly allow persons of ordinary skill in the art to recognize that [the inventor] invented what is claimed."). Thus, an applicant complies with the written description requirement "by describing the invention, with all its claimed limitations, not that which makes it obvious," and by using "such descriptive means as words, structures, figures, diagrams, formulas, etc., that set forth the claimed invention." Lockwood, 107 F.3d at 1572, 41 USPQ2d at 1966.
>
> An adequate written description of a DNA, such as the cDNA of the recombinant plasmids and microorganisms of the '525 patent, "requires a precise definition, such as by structure, formula, chemical name, or physical properties," not a mere wish or plan for obtaining the claimed chemical invention. Fiers v. Revel, 984 F.2d 1164, 1171, 25 USPQ2d 1601, 1606 (Fed. Cir. 1993). Accordingly, "an adequate written description of a DNA requires more than a mere statement that it is part of the invention and reference to a potential method for isolating it; what is required is a description of the DNA itself." Id. at 1170, 25 USPQ2d at 1606.

Response to Arguments

6. The response traverses the rejection and asserts that the arguments made with regard to the enablement rejection demonstrates that applicants had possession of the claimed subject matter before the patent application was filed. This argument has been thoroughly reviewed but was not found persuasive for the reasons set forth above.

Claim Rejections - 35 USC § 103

7. Claims 31-33 and 38-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over rs 5637 (dbSNP, ss7104, 1999), as evidence by Genbank Accession number AY438977, in view of Soderlund (US Patent 6,013,431).

Although the claims recite " a method for diagnosing a predisposition to obesity", the claims only make clear the outcome of determining the presence of a polymorphism as being indicative of a predisposition to obesity, however the claims are silent as to the determination of the absence of the polymorphic variation. Accordingly, such determination methods encompass the actual sequencing of the gene.

The polymorphism denoted rs5637 in PLA2G1B, which is at position 7328 of SEQ ID NO: 1 has been determined. With regard to claim 31, ss7104 teaches that the polymorphism is an A (absence of polymorphic variation) or a G and provides sequences flanking the polymorphism. Although the disclosure in dbSNP (ss7104) does not specifically teach a method of detecting the variation, Soderlund teaches a method of detecting nucleotide variations using a method of obtaining nucleic acid from a subject, hybridizing an oligonucleotide complementary to a known sequence which is adjacent to the polymorphic variation, extending the oligonucleotide, and detecting the presence or absence of the polymorphic variation (see Figures 1-3). Therefore, it would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to use the method of nucleotide variation detection of Soderlund to detect the polymorphism denoted rs5637 in a subject for the purpose of characterizing the polymorphism. In detecting the presence or absence of the polymorphism with the method of Soderlund, the ordinary artisan would have been motivated to construct sequences adjacent to the polymorphic variation as taught by Soderlund, including the sequence of SEQ ID NO: 38, which is immediately adjacent to the polymorphism taught by rs5637. The assay summary teaches the nucleotide sequence flanking the polymorphic variation. Therefore, with the teachings of Soderlund, constructing a primer for extension analysis of the polymorphism would have been

routine experimentation as Soderlund specifically provides guidance in the selection of sequences for polymorphic nucleotide detection.

With regard to the newly added recitation in claims 31 and 33, which require that the sequence be "identical to SEQ ID NO:1", it is noted that SEQ ID NO: 1 allows for numerous alternate alleles. As evidenced by Genbank Accession number AY438977, which teaches the PLA2G1B nucleotide sequence in humans, the gene has numerous alternative alleles. Therefore, although the disclosure in dbSNP does not teach a full length sequence identical to SEQ ID NO: 1, the PTO has sound basis for believing that the sequence from which the information was obtained, was identical to SEQ ID NO: 1. As stated in the MPEP in chapter 2100:

> Where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established. In re Best, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). "When the PTO shows a sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not." In re Spada, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990).

8. Claims 31-33 and 38-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over rs1179387 (dbSNP, ss1634336, October 2000), as evidence by Genbank Accession number AY438977, in view of Soderlund (US Patent 6,013,431).

Although the claims recite " a method for diagnosing a predisposition to obesity", the claims only make clear the outcome of determining the presence of a polymorphism as being indicative of a predisposition to obesity, however the claims are silent as to the determination of the absence of the polymorphic variation. Accordingly, such determination methods encompass the actual sequencing of the gene.

The polymorphism denoted rs1179387 in PLA2G1B, which is at position 9182 of SEQ ID NO: 1 has been determined. With regard to claim 5, ss1634336 teaches that the

polymorphism is an C or an A (complement: G or T) and provides sequences flanking the polymorphism. Although the disclosure in dbSNP (ss1634336) does not specifically teach a method of detecting the variant, Soderlund teaches a method of detecting nucleotide variations using a method of obtaining nucleic acid from a subject, hybridizing an oligonucleotide complementary to a known sequence which is adjacent to the polymorphic variation, extending the oligonucleotide, and detecting the presence or absence of the polymorphic variation (see Figures 1-3). Therefore, it would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to use the method of nucleotide variation detection of Soderlund to detect the polymorphism denoted rs1179387 in a human subject for the purpose of characterizing the polymorphism. In detecting the presence or absence of the polymorphism with the method of Soderlund, the ordinary artisan would have been motivated to construct sequences adjacent to the polymorphic variation as taught by Soderlund, including the sequence of SEQ ID NO: 40, which is immediately adjacent to the polymorphism taught by rs1179387. The assay summary teaches the nucleotide sequence flanking the polymorphic variation. Therefor, with the teachings of Soderlund, constructing a primer for extension analysis of the polymorphism would have been routine experimentation as Soderlund specifically provides guidance in the selection of sequences for polymorphic nucleotide detection.

With regard to the newly added recitation in claims 31 and 33, which require that the sequence be "identical to SEQ ID NO:1", it is noted that SEQ ID NO: 1 allows for numerous alternate alleles. As evidenced by Genbank Accession number AY438977, which teaches the PLA2G1B nucleotide sequence in humans, the gene has numerous alternative alleles. Therefore, although the disclosure in dbSNP does not teach a full length sequence identical to SEQ ID NO: 1, the

PTO has sound basis for believing that the sequence from which the information was obtained, was identical to SEQ ID NO: 1. As stated in the MPEP in chapter 2100:

> Where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established. In re Best, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). "When the PTO shows a sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not." In re Spada, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990).

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. No claims are allowed.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to examiner Jehanne Sitton whose telephone number is (571) 272-0752. The examiner can normally be reached Monday-Thursday from 8:00 AM to 5:00 PM and on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ram Shukla, can be reached on (571) 272-0735. The fax phone number for this Group is (571) 273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to (571) 272-0547.

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Jehanne Sitton

Jehanne Sitton
Primary Examiner
Art Unit 1634
12/22/06